Message

From: Steenland, Kyle [nsteenl@emory.edu]
Sent: 11/8/2013 3:27:37 PM
To: Jinot, Jennifer [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d0edf66a00054afe84f4ab5c5119562f-Jinot, Jennifer]
Subject: RE: ACC comments on EtO draft
Attachments: greife.eto.exposure.sjweh.1988.pdf

Jennifer

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Kyle

Am J Ind Med. 1994 Jun;25(6):825-36.
Statistical model for prediction of retrospective exposure to ethylene oxide in an occupational mortality study.
Hornung RW, Greife AL, Stayner LT, Steenland NK, Herrick RF, Elliott LJ, Ringenburg VL, Morawetz J.
SourceDepartment of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Cincinnati, OH 45226.

Abstract
Since direct measures of individual exposure seldom exist for the entire period of an occupational mortality study, retrospective exposure estimates are necessary. This is often done in a subjective manner involving a consensus of opinion from a panel of epidemiologists and industrial hygienists. An alternative method utilizing a statistical model provides a more objective procedure for retrospective exposure assessment. The development of a weighted multiple regression model is presented for estimation of exposure levels to ethylene oxide (ETO) for inclusion in a cohort mortality study of workers in the sterilization industry. Three steps in development of the model are described: (1) data acquisition and assessment, (2) model building, and (3) evaluation of the model. The final model explained a remarkable 85% of the variability in 205 average measurements of ETO levels. Exposure factors included in the model were exposure category, product type, size of the sterilization unit, selected engineering controls, days after sterilization, and calendar year. The model was evaluated in two ways: against a set of measurement data not used to develop the model and a panel of 11 industrial hygienists representing the sterilization industry. The model predicted ETO exposures within 1.1 ppm of the validation data set with a standard deviation of 3.7 ppm. The arithmetic and geometric means of the 46 measurements in the validation data set were 4.6 and 2.2 ppm, respectively. The model also outperformed the panel of industrial hygienists relative to the validation data in terms of both bias and precision.

From: Jinot, Jennifer [mailto:Jinot.Jennifer@epa.gov]
Sent: Friday, November 08, 2013 10:00 AM
To: Steenland, Kyle
Subject: ACC comments on EtO draft

hi, Kyle.

Ex. 5 Deliberative Process (DP)

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Ex. 5 Deliberative Process (DP) jennifer